mature sequence comprises both the conserved C-terminal seven cysteine domain 20, and an N-terminal sequence 18, referred to herein as an N-terminal extension, and which varies significantly in sequence between the various morphogens. Cysteines are represented in the figure by vertical hatched lines 22.

The signal peptide is cleaved rapidly upon translation, at a cleavage site that can be predicted in a given sequence using the method of Von Heijne ((1986) Nucleic Acids Research 14:4683) The "pro" form of the protein subunit, 24, in Figure 1 of WO 94/03600, includes both the prodomain and the mature domain, peptide bonded together.

According to WO 94/03600, OP-1 refers generically to the group of morphogenically active proteins expressed from part or all of a DNA sequence encoding OP-1 protein, including allelic and species variants thereof, e.g., humanOP-1 ("hOP-1"), or mouse OP-1 ("mOP-1".) The cDNA sequences and the amino acids encoding the full length proteins are provided in Seq. ID Nos. 1 and 2 (hOP1) and Seq. ID Nos. 3 and 4 (mOP1) of WO 94/03600. The mature proteins are defined by residues 293-431 (hOP1) and 292-430 (mOP1), wherein the conserved seven cysteine skeleton is defined by residues 330-431 and 329-430, respectively, and the N-terminal extensions are defined by residues 293-329 and 292-329, respectively. The "pro" regions of the proteins, cleaved to yield the mature, morphogenically active proteins, are defined essentially by residues 30-292 (hOP1) and residues 30-291 (mOP1).

In the claims:

28. (**Amended Twice**) A method for enhancing the formation and development of dendrites and synapses in hippocampal neurons, comprising contacting said neurons with a morphogen selected from: an OP-1 polypeptide, a BMP-2 polypeptide, a BMP-5 polypeptide, a BMP-6 polypeptide, or a 60A polypeptide, wherein said morphogen has a conserved C-terminal seven-cysteine skeleton at least about 60% identical to residues 330-431 of human OP-1 (SEQ ID NO: 2), and wherein said morphogen induces dendrite outgrowth in said hippocampal neuron.

29. (**Reiterated**) The method of claim 28, wherein said morphogen comprises residues 30-292 of SEQ ID NO: 2.